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Medical treatment of Left Ventricular Pseudoaneurysms

Jessica Webb BM BCh, MA (Cantab), MRCP FHEA¹, Rebecca M Gemmell MBBS, MA (Cantab)², Khaled Al-Fakih ³, Amedeo Chiribiri¹

¹ Division of Imaging Sciences and Biomedical Engineering, King's College London, SE1 7EH, United Kingdom

² Department of Cardiology, Princess Royal University Hospital, BR6 8ND, United Kingdom

³ Department of Cardiology, Lewisham and Greenwich NHS Trust Hospital, SE13 6LH, United Kingdom

Address for correspondence

Dr Jessica Webb Division of Imaging Sciences and Biomedical Engineering, 4th floor Lambeth Wing, King's College London, SE1 7EH, United Kingdom

Tel: +44 7970440562

Email: Jessica.webb@kcl.ac.uk

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Clinical picture

A 59-year-old male experienced severe central chest pain for one hour with no associated breathlessness. His medical history included rheumatoid arthritis for which he took methotrexate. His 12 lead electrocardiogram confirmed sinus rhythm with a heart rate of 68 bpm, Q waves in the inferior leads and persisting ST elevation in leads V3-V6. Blood tests confirmed increased troponin and an echocardiogram confirmed severely impaired LV function. Angiography noted an occluded right coronary artery with plaque in the left anterior descending artery but no targets for revascularisation. As he had no further chest pain he was discharged home with follow up at one month to consider whether he was suitable for an implantable cardioverter defibrillator.

Cardiac Magnetic Resonance Imaging (MRI) after one week confirmed a dilated left ventricle with an ejection fraction of 35%. There was a transmural myocardial infarction with a pseudoaneurysm of the basal inferior and inferolateral wall, contained by the pericardium (Figure 1a). Late gadolinium enhancement imaging demonstrated full thickness infarction in this region (Figure 1b) and infarction in the apex. This patient was treated medically.

A pseudoaneurysm is a contained rupture of a blood vessel or of the myocardial wall contained by pericardium, thrombus, or adhesions. An aneurysm, in contrast, results from a weakness in the wall with an outer layer than contains all layers of the myocardium. Differentiating these is clinically relevant as pseudoaneurysms have a greater risk of rupture and historically have had surgical treatment. The incidence of left ventricular aneurysms in patients with Q wave myocardial infarction is thought to

be 8-15%¹. The natural history of untreated ventricular pseudoaneurysm in asymptomatic patients is not clearly defined and the evidence is based largely on retrospective single centre case series. The risk of rupture had been thought to be as high as 30-46%² although advances in imaging have increased the detection of 'incidental' pseudoaneurysms in asymptomatic patients, possibly diluting this rupture risk. In a series published in 1998, the ten patients with ventricular pseudoaneurysms who did not undergo surgery, did not rupture over the four year follow up³. A recent publication described a good outcome in a similar patient not treated surgically⁴. Treatment of blood pressure, optimising heart failure medications and consideration of anticoagulation are undoubtedly important in these patients.

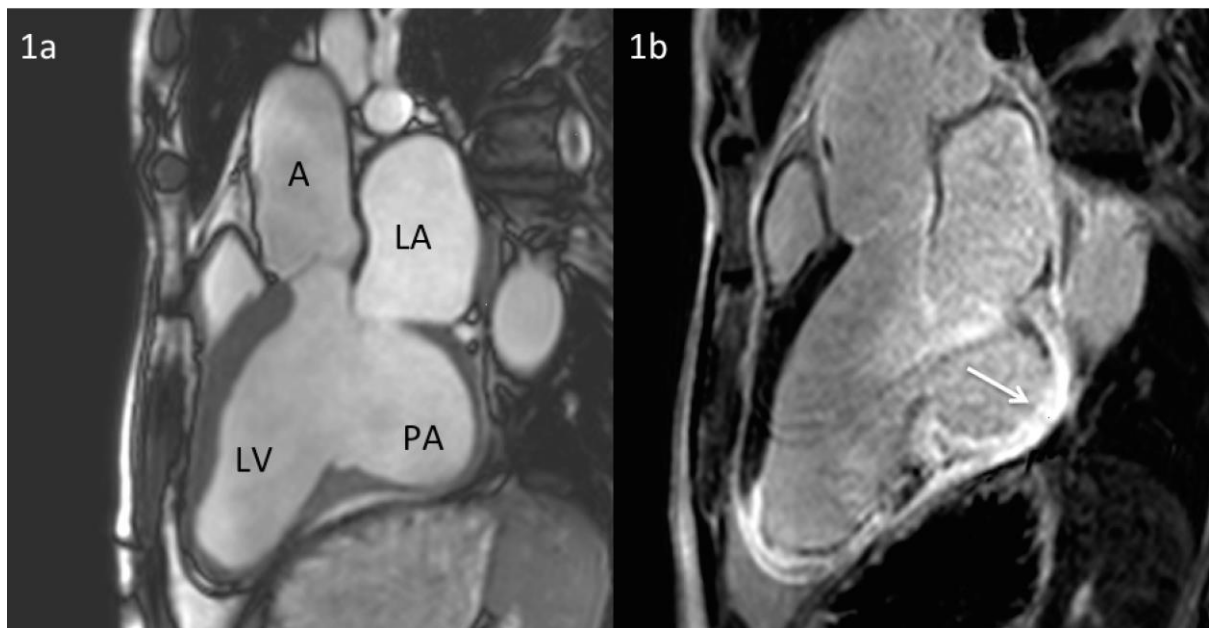


Figure Legends

Figure 1a

Cardiac magnetic resonance imaging (MRI) Left ventricular outflow tract confirming pseudoaneurysm in the basal inferolateral segment. A aorta, LA left atrium, LV left ventricle, PA pseudoaneurysm

Figure 1b

Late gadolinium enhancement of the left ventricular outflow tract confirming full thickness infarction in the basal inferolateral segment (white arrow) and in apex. Normal myocardium appears black.

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Abbreviations

MRI Magnetic Resonance Imaging

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